

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

HYTERA COMMUNICATIONS CORP., LTD.,	)	
	)	CASE NO.: 1:17-CV-1794
Plaintiff,	)	
	)	
v.	)	JUDGE DONALD C. NUGENT
	)	
MOTOROLA SOLUTIONS, INC.,	)	
	)	
Defendant.	)	<u>MEMORANDUM OPINION</u>
	)	<u>AND ORDER</u>
	)	

This matter is before the Court for claim construction. The parties have filed opposing Opening Claim Construction Briefs and Responses in support of their respective interpretations of disputed terms (ECF # 32, 33, 34, 35). The Court has heard oral arguments on the issue, and the parties filed Post-Hearing Claim Construction Briefs. (ECF #39, 46, 47). The issues are now fully briefed and ripe for consideration.

**FACTUAL AND PROCEDURAL HISTORY**

Hytera Communications Corp., Ltd. (“Hytera”) filed this action against Motorola Solutions, Inc. (“Motorola”) on August 28, 2017 to enforce its rights under United States Patent No. 9,183,846 (“the ‘846 Patent”), which relates to Adaptive Acoustic Adjustment for use in devices with audio output, including digital two-way radios and other push-to-talk communications devices. (ECF #1). An Amended Complaint was filed on November 3, 2017. In the First Amended Complaint, Hytera

claims that Motorola has knowingly and willfully infringed the '846 Patent by using or selling two-way communication devices that incorporate "Intelligent Audio," a feature that replicates the technology contained in the patent. (ECF #17). The case is now before the Court on a claim construction dispute relating to three terms, all of which appear in Claim One of the '846 Patent.

### **LEGAL STANDARD**

In order to determine the proper construction of disputed claims, the Court must look to several sources identified by the Patent Act, and by those Federal Courts that have interpreted and clarified the requirements of the Act. However, non-technical terms may not require elaborate interpretation. *See Brown v. 3M*, 265 F.3d 1349, 1352 (Fed. Cir. 2001). "The criterion [for claim construction] is whether the explanation aids the court and the jury in understanding the term as it is used in the claimed invention." *Funai Elec. Co. V. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1366-67 (Fed. Cir. 2010).

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Philips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005)(quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111 (Fed. Cir. 2004); see also *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)("we look to the words of the claims themselves . . . to define the scope of the patented invention"). Further, although Congress has required that a patent specification should include a segment wherein the inventor "shall particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery," (Act of July 4, 1836, ch. 357, § 6, 5 Stat. 117, 119), the Supreme Court has long since made clear that the claims themselves are "of

primary importance, in the effort to ascertain precisely what it is that is patented.” *Merrill v. Yeomans*, 94 U.S. 568, 570 (1876); *see also, e.g., White v. Dunbar*, 119 U.S. 47, 52 (1886); *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961).

In determining what a claim means, the Federal Circuit has repeatedly held that the words of the claim are generally to be given their ordinary and customary meaning, and has defined “ordinary and customary meaning” as “the meaning that the term would have to a person of ordinary skill in the art in question” at the time of the effective filing date of the patent application. *Philips*, 415 F.3d at 1312-13 (citations omitted). A person of ordinary skill in the art is presumed to have read the claim not only in the context of the particular claim containing the disputed term, but in the context of the entire patent, including the specification, and with knowledge of the prosecution history. *Multiform Desiccants, Inc. v. Medzan, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

The specification is “the single best guide to the meaning of a disputed term,” and the specification “acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.” *Philips* at 1320 (*quoting Vitronics*, 90 F.3d at 1582; *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004)). Section 112 of the Patent Act, 35 U.S.C. § 112, states that the specification

shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the same... [and] ... shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Although reference to the specification is potentially highly useful in construing or defining specific terms, or in providing context to terms within the individual claims, the Federal Circuit has warned courts against reading limitations from the specification, most especially from the description of

specific or preferred embodiments, into an individual claim. *Philips* at 1322; *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002); *Nazomi Communications, Inc. v. ARM Holdings, PLC*, 403 F.3d 1364, 1369 (Fed. Cir. 2005); *Gemstar-TV Guide Int'l, Inc. v. ITC*, 383 F.3d 1352, 1366 (Fed. Cir. 2004). “The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of the claims.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995)(en banc)(reaffirmed by *Philips* at 1312). “The patentee is free to chose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope.” *Thorner v. Sony Computer Entertainment America, LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012).

The prosecution history may also be relevant in construing a claim, in so far as it may provide some evidence as to how the inventor, and the United States Patent and Trademark Office (“PTO”) understood the patent, and as to whether the inventor, by disclaiming a particular interpretation of the patent, “limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Philips* at 1317 (citing *Vitronics*, 90 F.3d at 1582-83); *see also Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005); *ZMI Corp. V. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1580 (Fed. Cir. 1988).

The language of the claim, the information contained in the specification, and the prosecution history available through the public notice requirements in the patent process are all considered intrinsic sources for determining the meaning of disputed terms in a patent claim. In addition, outside or extrinsic sources such as dictionaries, treatises, and expert testimony may all be considered to discern the meaning of disputed terms so long as they do not “contradict claim

meaning that is unambiguous in light of the intrinsic evidence.” *Philips* at 1324 (citing *Vitronics*, 90 F.3d at 1583-84; *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1367 (Fed. Cir. 2003)).

### ANALYSIS

Claim One is described as follows:

A method for adaptively adjusting an acoustic effect, wherein the method is applied to an apparatus having an audio output device, and the method comprises:

obtaining an energy value of a current ambient noise;

receiving a first triggering instruction, and adjusting a current output volume based on the energy value of the current ambient noise; and

performing a treble boost processing if it is determined that the energy value of the current ambient noise is greater than a first threshold, or performing a bass boost processing if it is determined that the energy value of the current ambient noise is smaller than a second threshold

The parties have identified three disputed terms within Claim One that they believe require construction.<sup>1</sup> These include: “an energy value,” “treble boost processing,” and “bass boost processing.” The parties agree that the construction of “treble boost processing” and “bass boost processing” should be the same, with the exception of its application to either treble (high) frequencies or bass (low) frequencies.

---

<sup>1</sup> Hytera’s argument that Motorola has asked in its Inter Partes Review (“IPR”) petitions for Hytera’s construction to be adopted is disingenuous and without basis. It is clear from the submissions, and their context that Motorola simply argued that under either parties’ suggested construction the ‘846 Patent is invalid.

**A. “An energy value”**

Hytera claims that the term “an energy value” needs no construction, and should be assigned its plain and ordinary meaning. It then goes on to describe that meaning as “one or more energy values.” Motorola, on the other hand, seeks to have this Court construe “an energy value” as “a single energy value.”

Hytera cites *SanDisk Corp. v. Kingston Tech. Co.*, 695 F.3d 1348 (Fed. Cir. 2012) for the proposition that “the use of the indefinite articles ‘a’ or ‘an’ means ‘one or more.’” *Id.* at 1360 *SanDisk* also states that exceptions this general rule are limited and apply only when a patentee “evinces a clear intent to limit ‘a’ or ‘an’ to ‘one.’” *Id.* at 1342. If the language of the claims, the specification, or the prosecution history necessitate a departure from the general rule by making clear that the use of “an” is intended to refer to a single item, then the patentee will be held to that singular interpretation. *Rehco, LLC v. SpinMaster, Ltd.*, No. 13-cv-2245, 2017 WL 1079193, at \*16 (N.D. Ill. Mar. 22, 2017)(citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)). Contrary to Motorola’s contentions, the subsequent references to “the energy value” do not bolster the argument that “an energy value” is subject to a singular construction. *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338 (Fed. Cir. 2008).

Looking at the patent as a whole, however, there is support for Motorola’s position. The patent refers to “an energy value” or “the energy value” of “a current ambient noise.” The assignment of a value to a “current” noise evinces a clear intent to assign a distinct value to a level of noise existing at a specific, singular, moment in time, and the Patent contains no language that would

override this implication of singularity. Hytera has not explained how the value of a “current ambient noise” could manifest as multiple energy values.

Further, the patent seeks to compare a “current ambient noise” value to a pre-established threshold. There is no indication within the patent that the current noise’s energy value is or could be expected to be anything other than a singular number, nor how the invention would determine which value(s) to compare to the threshold if multiple values did exist. The usage of the term “an energy value” in the context of putting a value on a “current ambient noise” informs the proper construction of the term as being a singular value.

Hytera argues that the Patent does disclose how to determine a current value from multiple values, citing an explanation of the voice detection feature which states: “a current value of voice sample may be approximated by a weighted linear combination of several previous values.” Even in this example, however, the “current value” is a singular value, though it is derived by averaging multiple past values. Claim One does not deal with multiple past values, however, it references only a singular current value of the existing ambient noise.

Finally, the fact that the inventor did include a means of establishing a current value from multiple past values in connection with voice detection shows that when multiple values were anticipated, the inventor knew how to instruct the reader on how to transform them into a singular current value through weighting or averaging. The fact that there is no such weighting or averaging instruction that applies to the assignment of values in Claim One suggests that “an energy value” is already singular in nature.<sup>2</sup> In more basic terms, the Patent simply does not teach a reader how to

---

<sup>2</sup> In addition, this explanation does not apply to the term “energy value” in Claim One. As set forth in more detail below, Claim One does not include any determination of voice frequencies, and as such, the weighting of previous voice values would have no application in Claim One.

manage multiple energy values for ambient noise. On its face, the Patent limits the value to a “current” value, and “current” values are consistently treated as single values throughout the Patent. For these reasons, the Court adopts Motorola’s construction of “an energy value” in Claim One as “a single energy value.”

**B. “Treble/Bass boost processing”**

Hytera seeks to define “treble boost processing” as “an automatic adjustment that results in increased audibility of high frequencies in the voice band of the current output.” Motorola requests that this phrase be construed to mean “an amplification of all treble frequencies using a gain greater than 1.” The parties’ differences center around the definition of “boost,” the alleged requirement that the boost be automatically adjusted, and the proposed limitation of the boost to frequencies in the voice band. The parties agree that “treble boost processing” and “bass boost processing” should be construed in essentially the same manner.

**1. Boost**

Hytera claims that the term “treble boost” means an adjustment that either increases the treble frequencies, or decreases the bass frequencies in order to expand the difference between the frequencies, with the treble remaining relatively higher, when compared to the bass. Motorola contends that a “boost” always means an increase, such that a “treble boost” can only be achieved by increasing the treble frequency. There is nothing in the Patent itself to indicate that the term “boost” could mean either an increase in one frequency, or a relative decrease in another. The only use of the word “relative” within the Patent, according to Hytera, refers to an increase in overall volume, and does not describe the increase in frequencies that attend a “treble boost” or “bass boost” in Claim One. Although Hytera claims this description is limited to the application of volume increases, a full



reading of the Patent would indicate that it is meant to describe “conventional technologies” that existed prior to the invention described in the Patent, and does not even refer to the invention described within Claim One. In either case, the term relative is not used to describe or define the term “treble boost.”

If Hytera’s construction is adopted, it would import terms into the Claim that simply do not exist and are not interchangeable. Hytera claims that “boosting a frequency” is the same as increasing the audibility of that frequency, and that one may “boost” the audibility of a frequency by diminishing a competing frequency. Hytera does not claim that this means audibility could be either increased or diminished relative to some other factor. It recognizes that boost means an increase, but they seek to change the subject of the boost from treble frequency to audibility. Hytera’s own argument equates “boost” with an absolute increase. However, it replaces the language written into the claim with a term that does not exist within the Claim. Audibility and frequency do not have the same meaning and cannot simply be interchanged within the Patent to achieve the result Hytera is seeking. Claim One only speaks of boosting a specific frequency, and there is nothing in the Patent that would suggest that a frequency, as opposed to the audibility of that frequency, can be boosted without being increased.

This reading of the term also comports with Figure 5, which the Patent identifies as a schematic diagram of a frequency response with a “treble boost,” showing an increase in treble frequency as amplitude increases.<sup>3</sup> Hytera does not dispute that this figure shows “treble boost” as

---

<sup>3</sup> With regard to the corresponding term “bass boost,” Figure 6 is identified as a diagram of a frequency response with a “bass boost,” and shows an increase in bass frequency as amplitude increases.

“an amplification of all treble frequencies using a gain greater than 1.” It is true that a claim language is not limited by the embodiments in a Figure, if the claim language is broader than that embodiment. However, in this case, the Patent does not support a broader interpretation of the term “boost.” For these reasons, the Court finds that the term “treble boost” in Claim One of the ‘846 Patent requires an increase in the treble frequencies.

## 2. Automatic

The use of the word “processing” in combination with the “treble boost” and “bass boost” implies that the adjustment is made or processed by the invention and not by the user. The existence of adjusting modules as shown in Figures 7 and 8 suggests automatic adjustments made by the invention and not by the user. The description of the disclosure indicates that the invention is for a “method of adaptively adjusting an acoustic effect and an apparatus thereof.” Thus, the patent intends to address not only the creation of a means to make the adjustment, which could still require manual input to implement, but an apparatus to make the adjustment, which would suggest that the invention itself automatically makes the adjustment.

The Patent also defines the problem being solved by the invention as the need to manually adjust volume in order to improve the intelligibility of a voice. This clearly suggests that the invention is intended to eliminate the need for manual adjustment to be more convenient for the user, so “the user can focus on his work.” (Patent ‘846 Background). Further, it addresses and seeks to improve upon existing technology that allows for automatic adjustment of frequency, but without an accompanying automatic adjustment of volume. (Id.) The automatic nature of the adjustment is also identified in the description of preferred embodiments, and in the description of the advantages of the embodiments of the disclosure. (Patent ‘846 Summary, Column 3, lines 5-8; Column 4, lines 4-

10). Nearly every section of the Patent suggests that the intent of this invention is to automatically adjust both volume and frequency.

### 3. Voice Band


While the Background section of the Patent states that this invention seeks to improve upon other inventions that adjust audio frequency by better identifying voice and distinguishing it from ambient noise, and some embodiments speak to the identification of voice data, Claim One does not limit the treble frequency adjustments to frequencies within the voice band. (Patent ‘846 Background). The Patent states that when the first trigger instruction is received, the invention method “can adjust the current volume and adjust the frequency response by the treble enhancement or the bass enhancement based on the energy value of the current ambient noise” by “collecting voice data and detecting speech activity on the voice data.” Figure 2 makes clear that the sound data determines whether sound is ambient noise by performing a voice activity detection, where the sound data is not voice data, it is treated as ambient noise. (Fig. 2) Certain preferred embodiments also include the performance of voice activity detection on the sound data to differentiate voice activity from ambient noise, and the existence of a sound module to acquire and perform this detection process. (Patent ‘846 Summary, 2:51-55, 3:50-54). However, Claim One does not include this process of voice activity detection. Claim Five, which is not implicated in the parties request for claim construction, adds the voice activity detection process to the methods previously described in Claim One. There would be no need for Claim Five, if Claim One included these processes already. Voice detection is also explicitly included in Claims Six and Seven. There is no mention of voice detection in Claim One. The Court, therefore, will not construe “treble” in Claim One, to mean “voice band,” as requested by Hytera.

## CONCLUSION

For the reasons set forth above, the Court adopts the following construction of the disputed terms in Claim One of the '846 Patent:

- |                               |  |
|-------------------------------|--|
| 1. "an energy value "         | "a single energy value"  |
| 2. "treble boost processing " | "an automatic amplification of all treble frequencies using a gain greater than 1" |
| 3. "bass boost processing"    | "an automatic amplification of all bass frequencies using a gain greater than 1"   |

IT IS SO ORDERED.

  
\_\_\_\_\_  
DONALD C. NUGENT  
UNITED STATES DISTRICT JUDGE

Date: November 1, 2018